AMENDMENT NO. 5 JANUARY 2021

TO

IS 15959 (PART 1) : 2011 DATA EXCHANGE FOR ELECTRICITY METER READING, TARIFF AND LOAD CONTROL — COMPANION SPECIFICATION

PART 1 STATIC ENERGY METER

(This amendment shall be read along with Amendment No. 1 to Amendment No. 4)

(*Page* 1, *clause* **1**) — Insert the following note at the end of the clause:

NOTE — Wherever the words ‘Interface class No./Attribute’ appear in the standard, they shall be read as ‘Interface class no. and Attribute’

(*Page* 3, *clause* **3.23**) — Insert the following new clause:

‘**3.24** RTC default time format shall be 24 h.’

[*Page* 3, *clause* **4.2** (*see also Amendment No.* 4)] — Substitute the following for the existing:

‘All categories of meter (server) shall support at least one communication port as given at P2 below’

(*Page* 4, *clause* **4.3**) — Insert the following at the end of clause:

‘Simultaneous operation test is applicable only for meters with P1 and P2 ports.’

[*Page* 7, *Table* **6** — *Sl No*. (i) and (ii), *col* (2)] — Substitute the following for the existing:

‘For item at Sl No. (i) 0.b.43.0.2.255 and for Sl No. (ii) 0.b.43.0.3.255’

(*Page* 8*, clause* **7.5.1.3**) — Insert the following at this end of clause:

'HLS Authentication Mechanism Id (2) needs to be implemented.'

(*Page* 9*, clause* **9.1***, line* 4) — Substitute 'season, week, day profile tree' for season/week/day profile tree.

(*Page* 10*, clause* **11.2.2**, *sentence* 1) — Substitute the following for the existing sentence:

'The value attribute of the object will have a cumulative value since manufacturing.'

(*Page* 10*, clause* **11.2.3**, *line* 4) — Delete '(8-bit character)'.

(*Page* 11, *clause* **11.3.5**) — Add the following new clauses :

'**11.3.6** The values of a capture object of a profile may be replaced by null data, if it can be unambiguously recovered from the previous value (for example time stamp in block load profile: it can be calculated from the previous value and capture period).

Similarly, compact-array or array can be used with or without null data for example for string type data (Real Time Clock Stamp) compact array with Null data can be used.

Null data and compact array is an optional feature to be mutually agreed between the meter manufacturer and the meter reading software implementer.'

[*Page* 14, *clause* **B-3,** *Para* 1 (*see also Amendment No.* 1)] — Insert the following text after third sentence of the paragraph:

'Whenever capture period of Block Load Survey profile is changed, the earlier load survey data shall be cleared and the load survey data with new capture period shall be available from that particular days' first entry.'

(*Page* 16*, Table* 22) — Substitute the following table for the existing (incorporating all changes made *vide* Amendments No. 1 to 4):

Table 22 Instantaneous Parameters for Category A Meters

(*Clauses* C-2, C-4.1, C-4.2 *and* C-6)

Sl No.	**Parameter**	**OBIS Code**						**Interface Class/ Attribute**
		A	**B**	**C**	**D**	**E**	**F**	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
i)	Real time clock, date and time	0	0	1	0	0	255	8/2
ii)	Current, *I*R	1	0	31	7	0	255	3/2
iii)	Current, *I*Y	1	0	51	7	0	255	3/2
iv)	Current, *I*B	1	0	71	7	0	255	3/2
v)	Voltage, *V*RN	1	0	32	7	0	255	3/2
vi)	Voltage, *V*YN	1	0	52	7	0	255	3/2
vii)	Voltage, *V*BN	1	0	72	7	0	255	3/2
viii)	Voltage, *V*RY	1	0	32	7	0	255	3/2
ix)	Voltage, *V*BY	1	0	52	7	0	255	3/2
x)	Signed power factor, R-phase	1	0	33	7	0	255	3/2
xi)	Signed power factor, Y-phase	1	0	53	7	0	255	3/2
xii)	Signed power factor, B-phase	1	0	73	7	0	255	3/2
xiii)	Three phase power factor, PF	1	0	13	7	0	255	3/2
xiv)	Frequency	1	0	14	7	0	255	3/2
xv)	Apparent power, kVA	1	0	9	7	0	255	3/2
xvi)	Signed active power, kW (+ Forward; — Reverse)	1	0	1	7	0	255	3/2
xvii)	Signed reactive power, kvar (+ Lag; — Lead)	1	0	3	7	0	255	3/2
xviii)	Cumulative energy, kWh	1	0	1	8	0	255	3/2
xix)	Cumulative energy, kvarh (Lag)	1	0	5	8	0	255	3/2

Table 22 (*Concluded*)

Sl No.	Parameter	OBIS Code						Interface Class/ Attribute
		A	B	C	D	E	F	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
xx)	Cumulative energy, kvarh (Lead)	1	0	8	8	0	255	3/2
xxi)	Cumulative energy, kVAh	1	0	9	8	0	255	3/2
xxii)	Number of power-failures.	0	0	96	7	0	255	1/2
xxiii)	Cumulative power-failure duration, min	0	0	94	91	8	255	3/2
xxiv)	Cumulative tamper count	0	0	94	91	0	255	1/2
xxv)	Cumulative billing count	0	0	0	1	0	255	1/2
xxvi)	Cumulative programming count	0	0	96	2	0	255	1/2
xxvii)	Billing date	0	0	0	1	2	255	3/2
xxviii)	Maximum demand, kW	1	0	1	6	0	255	4/2, 5
xxix)	Maximum demand, kVA	1	0	9	6	0	255	4/2, 5

NOTES

1 The items at Sl No. (v), (vi), and (vii) are for 3φ/4W system of measurement with neutral as reference point.

2 The items at Sl No. (viii) and (ix) are for 3φ /3W system of measurement with Y-phase as reference point.

3 Signed power factor: (+) indicates lag and (–) indicates lead.

4 The parameters at Sl No. (xviii) to (xxvi) hold cumulative values at that instant from the date of manufacturing or installation of meter as the case may be

5 The above list is identified for the purpose of communication to HOST or HHU.

6 The utilities may choose, based on needs, additional parameters for display purpose only.

7 Item number at Sl No. (xxv) refers to the billing period counter.

8 If not specified, the billing date shall be first day of the month and time shall be 00:00 h.

9 The parameter current *I*Y and signed power factor, Y - phase are not applicable for 3φ/3W meter.

10 The RTC — Time format by default shall be hh:mm:ss..

11 Signed power factor shall be verified at rated voltage, rated current and rated frequency at 0.5 lag and 0.8 lead.

12 Power and Energy related parameters shall be verified at UPF, 0.5 lag and 0.8 lead.

13 For items at Sl No. (xxviii) and (xxix) the attributes 2 and 5 of indicated IC shall be captured in instantaneous profile. The attribute 3 of indicated IC shall be captured in Scaler profile. The RTC — Time format shall be hh:mm

14 The item at Sl No. (xvi) Signed active power, kW (-Reverse), minus sign is not mandatory.

15 In case meter is powered up with Voltage only, Sl.No. (x), (xi), (xii), (xiii) should store the value as UPF.”

(*Page* 17, *Table* 23) — Substitute the following OBIS code for item at Sl No. (ii):

‘1.0.31.27.0.255’

(*Page* 18, *Table* 24) — Substitute the following table for the existing (incorporating all changes made vide Amendments No. 1 to 4):

Table 24 Instantaneous Parameters for Category B Meters

(*Clauses* D-2, D-3.3 *and* D-3.4)

Sl No.	Parameter	OBIS Code						Interface Class/ Attribute
		A	B	C	D	E	F	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
i)	Real time clock, date and time	0	0	1	0	0	255	8/2
ii)	Current, *I*R	1	0	31	7	0	255	3/2
iii)	Current, *I*Y	1	0	51	7	0	255	3/2
iv)	Current, *I*B	1	0	71	7	0	255	3/2
v)	Voltage, *V*RN	1	0	32	7	0	255	3/2
vi)	Voltage, *V*YN	1	0	52	7	0	255	3/2
vii)	Voltage, *V*BN	1	0	72	7	0	255	3/2
viii)	Voltage, *V*RY	1	0	32	7	0	255	3/2
ix)	Voltage, *V*BY	1	0	52	7	0	255	3/2
x)	Signed power factor, R-phase	1	0	33	7	0	255	3/2
xi)	Signed power factor, Y-phase	1	0	53	7	0	255	3/2
xii)	Signed power factor, B-phase	1	0	73	7	0	255	3/2

Table 24 (*Concluded*)

Sl No.	**Parameter**	**OBIS Code**						**Interface Class/ Attribute**
		A	**B**	**C**	**D**	**E**	**F**	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
xiii)	Three phase power factor, PF	1	0	13	7	0	255	3/2
xiv)	Frequency	1	0	14	7	0	255	3/2
xv)	Apparent power, kVA	1	0	9	7	0	255	3/2
xvi)	Signed active power, kW (+ import: — export)	1	0	1	7	0	255	3/2
xvii)	Signed reactive power, kvar (+ Lag; — Lead)	1	0	3	7	0	255	3/2
xviii)	Cumulative energy, kWh (Import)	1	0	1	8	0	255	3/2
xix)	Cumulative energy, kWh (Export)	1	0	2	8	0	255	3/2
xx)	Cumulative energy, kVAh (Import)	1	0	9	8	0	255	3/2
xxi)	Cumulative energy, kVAh (Export)	1	0	10	8	0	255	3/2
xxii)	Number of power, failures.	0	0	96	7	0	255	1/2
xxiii)	Cumulative power failure duration, min	0	0	94	91	8	255	3/2
xxiv)	Cumulative tamper count	0	0	94	91	0	255	1/2
xxv)	Cumulative billing count	0	0	0	1	0	255	1/2
xxvi)	Cumulative programming count	0	0	96	2	0	255	1/2
xxvii)	Billing date	0	0	0	1	2	255	3/2

NOTES

1 The items at Sl No. (v), (vi) and (vii) are for 3φ/4W system of measurement with neutral as reference point.

2 The items at Sl No. (viii), (ix) are for 3φ /3W system of measurement with Y-phase as reference point.

3 Signed Power factor: (+) indicates lag and (–) indicates lead.

4 The parameters at Sl No. (xviii) to (xxvi) hold cumulative values at that instant from the date of manufacturing or installation of meter as the case may be.

5 The above list is identified for the purpose of communication to HOST or HHU.

6 The utilities may choose, based on needs, additional parameters for display purpose only.

7 Item number at Sl No. (xxv) refers to the billing period counter.

8 If not specified, the billing date shall be first day of the month and time shall be 00:00 h.

9 The parameter current *I*Y and signed power factor, Y — phase are not applicable for 3φ/ 3W meter.

10 The RTC — Time format by default shall be hh:mm:ss

11 Signed power factor shall be verified at rated voltage, rated current and rated frequency at 0.5 lag and 0.8 lead.

12 Power and Energy related parameters shall be verified at UPF, 0.5 lag and 0.8 lead.

13 In case meter is powered up with Voltage only, Sl.No. (x), (xi), (xii), (xiii) should store the value as UPF.

(*Page* 18*, clause* **D-5.1,** *sentences* 4 *and* 5) — Substitute the following for the sentence 4 and sentence 5:

'The capture object values will be copied into a buffer of this array automatically as per capture period which shall be statically fixed as 24 h.'

(*Page* 21, *Table* 27) — Substitute the following for the existing table (incorporating all changes made vide Amendments No. 1 to 4):

Table 27 Instantaneous Parameters for Category C Meters

(*Clauses* E-2, E-3.2 *and* E-3.3)

Sl No.	Parameter	OBIS Code						Interface Class/ Attribute
		A	B	C	D	E	F	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
i)	Real time clock, date and time	0	0	1	0	0	255	8/2
ii)	Current, *I*R	1	0	31	7	0	255	3/2
iii)	Current, *I*Y	1	0	51	7	0	255	3/2
iv)	Current, *I*B	1	0	71	7	0	255	3/2
v)	Voltage, *V*RN	1	0	32	7	0	255	3/2

Table 27 (*Continued*)

Sl No.	**Parameter**	**OBIS Code**						**Interface Class/ Attribute**
		A	**B**	**C**	**D**	**E**	**F**	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
vi)	Voltage, *V*YN	1	0	52	7	0	255	3/2
vii)	Voltage, *V*BN	1	0	72	7	0	255	3/2
viii)	Voltage, *V*RY	1	0	32	7	0	255	3/2
ix)	Voltage, *V*BY	1	0	52	7	0	255	3/2
x)	Signed power factor, *R*-phase	1	0	33	7	0	255	3/2
xi)	Signed power factor, *Y*-phase	1	0	53	7	0	255	3/2
xii)	Signed power factor, *B*-phase	1	0	73	7	0	255	3/2
xiii)	Three phase power factor, PF	1	0	13	7	0	255	3/2
xiv)	Frequency	1	0	14	7	0	255	3/2
xv)	Apparent power, kVA	1	0	9	7	0	255	3/2
xvi)	Signed active power, kW (+ Forward; — Reverse)	1	0	1	7	0	255	3/2
xvii)	Signed reactive power, kvar (+ Lag; — Lead)	1	0	3	7	0	255	3/2
xviii)	Number of power — failures	0	0	96	7	0	255	1/2
xix)	Cumulative power failure duration, min	0	0	94	91	8	255	3/2
xx)	Cumulative tamper count	0	0	94	91	0	255	1/2
xxi)	Cumulative billing count	0	0	0	1	0	255	1/2
xxii)	Cumulative programming count	0	0	96	2	0	255	1/2
xxiii)	Billing date	0	0	0	1	2	255	3/2
xxiv)	Cumulative energy, kWh	1	0	1	8	0	255	3/2
xxv)	Cumulative energy, kvarh (Lag)	1	0	5	8	0	255	3/2

Table 27 (*Concluded*)

Sl No.	Parameter	OBIS Code						Interface Class/ Attribute
		A	B	C	D	E	F	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
xxvi)	Cumulative energy, kvarh (Lead)	1	0	8	8	0	255	3/2
xxvii)	Cumulative energy, kVAh	1	0	9	8	0	255	3/2
xxviii)	Maximum Demand, kW	1	0	1	6	0	255	4/2,5
xxix)	Maximum Demand, kVA	1	0	9	6	0	255	4/2,5

NOTES

1 The items at Sl No. (v), (vi) and (vii) are for 3φ /4W system of measurement with NEUTRAL as reference point.

2 The items at Sl No. (viii) and (ix) are for 3φ /3W system of measurement with Y-Phase as reference point.

3 Signed Power factor : (+) indicates lag and (–) indicates lead.

4 The parameters at Sl No. (xviii) to (xxii) hold cumulative values at that instant from the date of manufacturing or installation of meter as the case may be.

5 The above list is identified for the purpose of communication to HOST or HHU.

6 The utilities may choose, based on needs, additional parameters for display purpose only.

7 Item at Sl No. (xxi) refers to the Billing Period Counter.

8 Item at Sl No. (xxiii) — Data type to be same as for attribute 2 of IC = 8, Clock. If not specified, the billing date shall be first day of the month and time shall be 00:00 h.'

9 The item at Sl No. (xvi) Signed active power, kW (-Reverse), minus sign is not mandatory.

10 The parameter Current *I*Y and Signed power factor, Y- phase are not applicable for 3φ/ 3W meter.

11 The RTC — Time format by default shall be hh:mm:ss.

12 Signed power factor shall be verified at rated voltage, rated current and rated frequency at 0.5 lag and 0.8 lead.

13 Power and Energy related parameters shall be verified at UPF, 0.5 lag and 0.8 lead.

14 For Sl No. (xxviii) and (xxix), the attributes 2 and 5 of indicated IC shall be captured in instantaneous profile. The attribute 3 of indicated IC shall be captured in Scaler profile. The RTC — Time format shall be HH:MM.

15 In case meter is powered up with Voltage only, Sl.No. (x), (xi), (xii), (xiii) should store the value as UPF.'

[*Page* 23, *Table* 30 (*see also Amendment No.* 3 *and* 4)] — Insert the following new notes:

'**4** Parameters at Sl. No. (iii), (iv) are not mandatory to print on meter's face plate.

5 Parameters at Sl. No. (vii), (viii) are not mandatory to print on meter's face plate where these are not applicable, (fixed as 1) for whole current meters.'

[*Page* 24, *Table* 31 (*see also Amendment No.* 1, 2 *and* 3)] — Insert the following new notes:

'**9** Programming of activity calendar for time zones shall support time format as HH:MM, where MM shall be in line with demand integration period'.

10 On activation of new time zones settings, the on — going billing cycle data will be generated and a new billing cycle shall be commenced as per new activity calendar.'

[Page 20, *clause* **E-8** (*see also Amendment No.* 2)] — Substitute as below in place of last two sentences of the paragraph:

'The capture object values will be copied into a buffer of this array automatically as per capture period which shall be statically fixed as 24 h.'

[Page 20, *clause* **E-12** (*see also Amendment No.* 2)] — Substitute as below in place of last two sentences of the paragraph:

'The capture object values will be copied into a buffer of this array automatically as per capture period which shall be statically fixed as 24 h.'

[Page 20, *Table* 43 *(see also Amendment No.* 2)] Insert the following new Note after note 7:

'**8** In case meter is powered up with Voltage only, Sl. No. (v) should store the value as UPF. '

[Page 20, *Table* 48 (*see also Amendment No.* 2)] — Insert new note after note 6 as below:

'**7** Programming of activity calendar for time zones shall support time format as HH:MM, where MM shall be in line with demand integration period'

(ETD 13)

Publication Unit, BIS, New Delhi, India